

# **Installation Based Residential HVAC Equipment**

## **Great River Energy 28 Member Cooperatives**

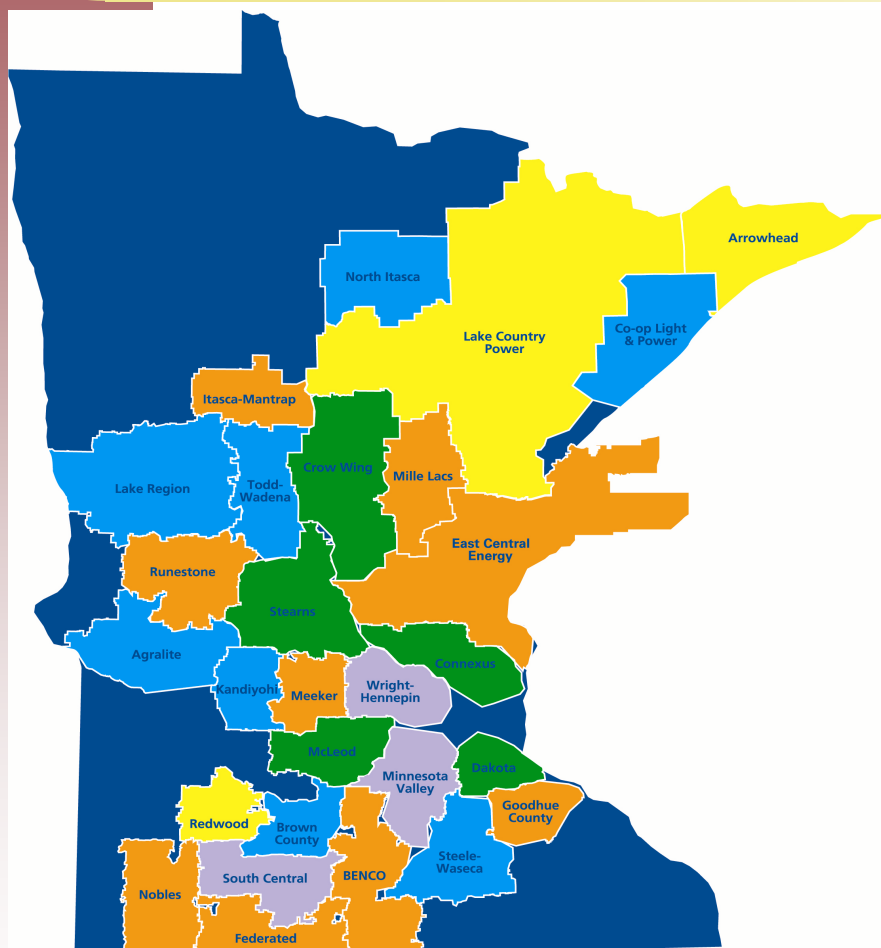
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## Who is GRE? Who do we serve?



- GRE provides wholesale power to 28 distribution cooperatives.
- These distribution systems serve more than 645,000 retail customers.
- 70% Residential  
30% Commercial/Agricultural
- 4,400 Miles of transmission
- 28 Member cooperatives serve over 60% of the geographic area



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# www.GreatRiverEnergy.com

- ▶ Agralite Electric Cooperative
- ▶ Arrowhead Electric Cooperative
- ▶ BENCO Electric Cooperative
- ▶ Brown County Rural Electrical Association
- ▶ Connexus Energy
- ▶ Cooperative Light & Power
- ▶ Crow Wing Power
- ▶ Dakota Electric Association
- ▶ East Central Energy
- ▶ Federated Rural Electric Association
- ▶ Goodhue County Cooperative Electric Association
- ▶ Itasca Mantrap Cooperative Electrical Association
- ▶ Kandiyohi Power Cooperative
- ▶ Lake Country Power
- ▶ Lake Region Electric Cooperative
- ▶ McLeod Cooperative Power Association
- ▶ Meeker Cooperative Light & Power Association
- ▶ Mille Lacs Energy Cooperative
- ▶ Minnesota Valley Electric Cooperative
- ▶ Nobles Cooperative Electric
- ▶ North Itasca Electric Cooperative
- ▶ Redwood Electric Cooperative
- ▶ Runestone Electric Association
- ▶ South Central Electric Association
- ▶ Stearns Electric Association
- ▶ Steele-Waseca Cooperative Electric
- ▶ Todd-Wadena Electric Cooperative
- ▶ Wright-Hennepin Cooperative Electric Association



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# Why We Need an Installation Based Program

- ▶ Installations increased from 2,242 in 2007 to 3,381 in 2008
- ▶ Industry changes in manufacturing standards did not justify significant equipment rebates
- ▶ 50 to 75 percent of installations operate below the rated performance
- ▶ Significant energy savings and environmental benefits can be achieved
- ▶ Lowers customers' energy bills, decrease call back and warranty claims which improves customer satisfaction and contractor profits
- ▶ Currently support installation based program
  - ACCA, EPA, CEE, NATE, MOES, Xcel Energy, Minnesota Power, Great River Energy, Focus on Energy



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## What you get from a SEER 13 (DOE)

- SEER 10.2 undercharged by 20%
- SEER 9.7 undercharged by 20% and inadequate airflow
- SEER 10.3 ducts air leakage
- SEER 7.7 charge, airflow, and ducts all have installation issues
- SEER 7.0 charge, airflow, ducts and over sizing are issues

Note: Information provided by Leon Neal, Advanced Energy Inc.



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# Key Components of Quality Installation

- ▶ On-line registration of HVAC company and all technicians
  - Email Address or Addresses (all technicians)
  - Federal or State Tax ID Number
- ▶ Training (if needed)
  - Proper sizing (Manual J)
  - Proper refrigerant charge
  - Appropriate air flow
  - Duct leakage and sealing options
- ▶ Pass assessment company placed in on-line public search database
- ▶ Complete, review and sign rebate forms (submit or leave with retail customer)
- ▶ Installation verification  
(10% of installs by 3<sup>rd</sup> party)



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# Registered QI Program Contractor

- ▶ On-line assessment estimated to take 30-40 minutes
- ▶ 50 questions covering 4 areas
- ▶ Immediate notification of pass/fail – scores can be printed
- ▶ Pass – will receive email within 24 hrs from HVACReduction.net with a PDF certificate of completion
- ▶ Fail – List of recommendations on modules requiring attention
- ▶ No cost for first assessment. One per shop.
  - Additional assessments \$39 each



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# Equipment and Rebates

- ▶ Air Conditioning & Refrigeration Institute (AHRI)  
<http://www.ahridirectory.org/index.html>
- ▶ Systems (condenser, coil and furnace\*)

| SEER Rating | Incentives                     |
|-------------|--------------------------------|
| $\leq 14$   | HVAC Contractor Incentive \$30 |
| $\geq 14$   | \$180                          |
| $\geq 15$   | \$280                          |
| $\geq 16$   | \$330                          |



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\* Currently evaluating ECM blower motors and furnace rebates with CAC/ASHP program



# Information Required

- ▶ Condenser model and serial number
- ▶ Evaporator model and serial number
- ▶ Furnace model and serial number (New or Retro-Fit furnace or Motor\*)
- ▶ AHRI number and SEER level
- ▶ Airflow and refrigerant measurements
- ▶ Technician signature and printed name with technician registered number



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# Challenges

- ▶ I've done this for 20 years I know what I'm doing
- ▶ I don't have a computer
- ▶ I can not look at computer screens for religious reasons
- ▶ Contractors subtracting rebate amount from bid to avoid doing paperwork
- ▶ AHRI certification changes on SEER ratings
- ▶ CAC/ASHP SEER ratings dependant on furnace or air handling equipment
- ▶ Verification of proper installation



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# Questions Feedback



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